

**REMARKS**

These remarks are submitted in reply to the Office Action dated July 12, 2006. Applicant respectfully requests reconsideration and further examination of the patent application under 37 C.F.R. § 1.111.

Claims 1 – 6 and 16 - 21 remain in the application. Claims 7 – 15 and 22 have been previously withdrawn further to a restriction requirement and are herein canceled. Based on the remarks herein, Applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections.

I. Claims 1 – 6 and 16 - 21 were rejected under 35 U.S.C. 103(a) as being unpatentable over Eidson et al. (6,529,716) in view of Porambo et al. (5,280,638).

Applicant has amended claims 1 and 16 to include “voltage tunable dielectric varactors”. Support for this amendment is found at least on page 7, line 11, which provides:

All embodiments can utilize voltage-controlled tunable dielectric capacitors as tuning elements. These varactors show high Q, especially at high frequencies, and are very linear with very good IP3.

Applicant submits that the diode varactors provided in Porambo et al. are distinct from the voltage tunable dielectric varactors as provided and claimed in the present invention. Common varactors used today are Silicon and GaAs based diodes. The performance of these varactors is

defined by the capacitance ratio,  $C_{max}/C_{min}$ , frequency range and figure of merit, or Q factor ( $1 / \tan \delta$ ) at the specified frequency range. The Q factors for these diode varactors for frequencies up to 2 GHz are okay; however, at frequencies above 2 GHz, the Q factors of these varactors degrade rapidly. At 10 GHz the Q factors for these diode varactors are usually only about 30. However, in the tunable dielectric varactor as claimed in the present invention, the capacitance is tuned by applying a control voltage to change a dielectric constant in a tunable dielectric material. Tunable dielectric varactors have high Q factors, high power handling, low intermodulation distortion, wide capacitance range, and low cost – unlike the diode varactors of Porambo et al.

Applicant respectfully submits that with the present claim amendments and remarks above, the rejection of independent claims 1 and 16 and claims that depend therefrom have been traversed.

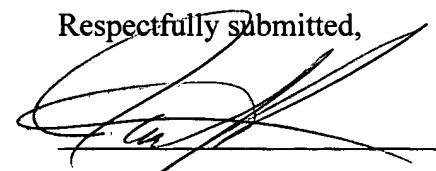
## Conclusion

From the foregoing, Applicants respectfully submit that all of the stated grounds of rejections have been properly traversed, accommodated, or rendered moot. Accordingly, Applicants respectfully request that the application is in condition for allowance and respectfully request such action.

If the Examiner believes, for any reasons, that personal communication will expedite prosecution of this application the Examiner is invited to telephone the undersigned at the following number: 202-607-4607.

The USPTO is authorized to charge Deposit Account No. 502697 any fees associated with this response.

Respectfully submitted,



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